

REMARKS

Claims 1-39 are pending in the application. The Examiner has rejected Claims 1, 2, 9, 14-19, 21, 22, 25, 26, 29, 30, and 36-39 and objected to Claims 3-8, 10-13, 20, 23, 24, 27, 28, 31, and 32. Claims 33-35 are allowed.

Claim Rejections Under 35 U.S.C. §102

The Examiner rejected Claims 25, 26, 29, and 30 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,376,866 (hereinafter "Erdman '866"). Applicants respectfully submit that Erdman '866 does not disclose a method for detecting a locked or stopped rotor in a motor control system having a plurality of phase coils driven by power drivers including the steps of disabling the power drivers; then measuring the back EMF generated from the plurality of phase coils; and then enabling the power drivers after a time period dependent on the measured back EMF, as called for in Claim 25.

Erdman '866 discloses a circuit for detecting back EMF of a motor winding, as shown in Figs. 25a-25b, including operational amplifier 382. The circuit functions to sequentially drive power transistors 362 and 364 and to initiate the drive signal when the rotor-mounted permanent magnets of the motor are optimally located with respect to the winding to be turned on. This optimal location is derived from the back EMF voltage of the next winding in the drive sequence. Operational amplifier 382 integrates this back EMF voltage and, when the integrated voltage reaches a reference voltage level, the succeeding logic parts are made to change state and to sequence or index to the next winding energizing event. Operational amplifier 382 integrates the back EMF voltage *while the power drivers remain enabled* to provide power to the motor windings. The power transistors 362 and 364 remain enabled during integration of the back EMF voltage. Nowhere does Erdman '866 disclose disabling the power drivers, then measuring the back EMF voltage, and then enabling the power drivers, as called for in Claim 25. Therefore, clearly Claim 25, and Claims 26, 29, and 30 depending therefrom, are not anticipated by Erdman '866.

Claim Rejections Under 35 U.S.C. §103

The Examiner rejected Claims 1, 2, 9, 14-19, 21, 22, and 36-39 under 35 U.S.C. §103(a) as being unpatentable over Erdman '866. The disclosure of Erdman '866 is discussed above. Nowhere does Erdman '866 disclose or suggest a method or apparatus for a motor

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control system including measuring the back EMF voltage of the phase coils while the output drivers are momentarily disabled, as called for in independent Claims 1, 9, 18, and 36. Therefore, clearly Claims 1, 9, 18, and 36, and Claims 2, 14-17, 19, 21, 22, and 37-39 depending therefrom, are neither anticipated nor rendered obvious by Erdman '866.

Allowable Subject Matter

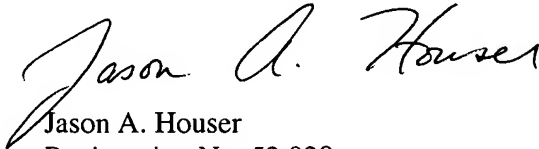
Applicants appreciate the Examiner's allowance of Claims 33-35 and the indication of allowable subject matter in Claims 3-8, 10-13, 20, 23, 24, 27, 28, 31, and 32. Applicants respectfully submit that, in view of the arguments above, Claims 3-8, 10-13, 20, 23, 24, 27, 28, 31, and 32 are in condition for allowance.

It is believed that the above represents a complete response to the Office Action and reconsideration is requested.

In the event Applicants have overlooked the need for an extension of time or payment of fee, Applicants hereby petition therefor and authorize that any charges be made to Deposit Account No. 02-0385, BAKER & DANIELS.

If any questions concerning this application should arise, the Examiner is encouraged to telephone the undersigned at 260/424-8000.

Respectfully submitted,


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CERTIFICATE OF MAILING

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE AS FIRST CLASS MAIL IN AN ENVELOPE ADDRESSED TO: COMMISSIONER OF PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450, on: May 4, 2005

JASON A. HOUSER, NO. 53,038
NAME OF REGISTERED REPRESENTATIVE


SIGNATURE

May 4, 2005
DATE